EDU

Educational service



Fig. 1. Block diagram of typical course program

1 Why educational training?

Inframet is basically a top world manufacturer of equipment for testing electro-optical imaging/laser systems. Therefore main task is Inframet is manufacturing systems for testing E-O imaging/laser systems: thermal imagers, VIS-NIR cameras, SWIR imagers, laser range finders, laser pointers, multi sensor imaging/laser systems, optical sights, night vision devices, image intensifier tubes. It is typical that Inframet engineers carry out short operational training having aim to train customer to do proper operation/maintenance of delivered test systems. However, Inframet can deliver also more expanded educational training on electro-optical imaging/laser metrology that includes division of electro-optical technology, technical review, characterizations, and equipment and methods of testing EO systems.

The course is targeted for scientific institutions/governmental agencies who want to understand division of EO technology, principles of work of each types of EO systems, and characterizations and testing of EO imaging/laser systems (including practical tests of exemplary EO systems). The course includes also standardization of test method, optimal tender requirements, optimal test system and proper interpretation of measurement results.

2 Training program

- 1. Division of EO surveillance systems
- 2. Introduction to boresight EO systems
- 3. Thermal imagers
 - 1 Review of thermal imaging technology
 - 2 Parameters and boresight errors of thermal imagers
 - 3 Equipment for testing and boresight thermal imagers

4 Practical demonstration of systems for testing thermal imagers - system operation and measurement of parameters

- 3.5 Test of thermal imagers by students under trainer supervision
- 4. VIS-SWIR cameras
 - 1 Review of VIS-SWIR imaging technology
 - 2 Parameters and boresight errors of VIS-SWIR cameras
 - 3 Equipment for testing VIS-NIR cameras and SWIR imagers
 - 4 Practical demonstration of systems for testing VIS-NIR cameras and SWIR imagers operation and measurement of parameters 4.5 Test of VIS-NIR cameras and SWIR imagers by students under trainer supervision
- 5. Laser systems
 - 1. Review of laser technology for EO surveillance systems (LRFs, designators, pointers)
 - 2. Parameters and boresight errors of LRFs, designators, pointers (including tender requirements and standards)
 - 3. Equipment for testing and boresight LRFs, designators, pointers





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- 4. Practical demonstration of systems for testing LRFs, designators, pointers operation and measurement of parameters
- 5 Test of LRFs, designators, pointers by students under trainer supervision
- 6. Multi sensor systems
 - 1. Review of multi sensor surveillance systems technology
 - 2. Parameters and boresight errors of multi sensor surveillance systems
 - 3. Equipment for testing and boresight multi sensor systems
 - 4. Practical demonstration of systems for testing multi sensor systems operation and measurement of parameters
 - 5. Practical tests of multisensor systems by students

7. Night vision devices

- 1. Review of night vision technology
- 2. Parameters and boresight errors of NVDs
- 3. Equipment for testing NVD
- 4. Practical demonstration of systems for testing NVDs system operation and measurement of parameters
- 5. Test of NVDs by students under trainer supervision
- 6. Parameters image intensifiers
- 7. Practical demonstration of systems for testing II tubes system operation and measurement of parameters
- 8. Test of II tubes by students under trainer supervision

8. Optical sights

- Review optical sights technology
 Parameters and boresight errors of telescopic sights (including tender requirements and standards)
- 3. Equipment for testing and boresight telescopic sights
- 4. Practical demonstration of systems for testing telescopic sights operation and measurement of parameters
- 5. Test of optical sights by students under trainer supervision

9. Questions and answers session

Attention: The course is carried out in form of lectures followed by demonstration of practical tests by supervisor. Finally tests are carried out by students. It can be estimated that at least 50% of training times is used for work on real test systems.

3 Time table

Time duration of this educational course depends on educational background of students. Further on, due to huge size of EO technology some customers are not interested in total EO imaging/laser technology. In such situation the course can be limited to two main parts:

- Metrology of electronic imaging/laser systems (thermal imagers, VIS-NIR cameras, SWIR imagers, multi sensor 1 imaging/laser systems)
- 2. Metrology of classical night vision and optical systems (optical sights, night vision devices, image intensifier tubes).

Time duration:

- 1. Electro-optical metrology: ten working days
- 2. Metrology of electronic imaging/laser systems: six working days
- 3. Metrology of classical night vision and optical systems: five working days.

4 Types of course organization

The courses are organized in two different ways:

- 1. Special training for a group of people only from a single institution (date and program according to customer preferences)
- 2. Scheduled training for a group of students from several institutions (group up to 16 people).

Inframet has obtained a series of positive references from students who attended the educational training on metrology of EO surveillance systems. If you have further questions about the educational training then please contact us.

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CONTACT: Tel: +48 22 6668780

Fax: +48 22 3987244

Email: info@inframet.com

